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(12) **United States Patent**
So et al.(10) Patent No.: **US 6,361,926 B1**
(45) Date of Patent: **Mar. 26, 2002**(54) **ACID FUNCTIONAL POLYMERS BASED ON
BENZOCYCLOBUTENE**

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OTHER PUBLICATIONS(75) Inventors: **Ying H. So; Robert A. DeVries;
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2589-2598, (1990).(73) Assignee: **The Dow Chemical Company**,
Midland, MI (US)Kirchoff, et al., *Prog. Polym. Sci.*, "Benzocyclobutenes in
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(21) Appl. No.: 09/177,819

(22) Filed: **Oct. 23, 1998**Marks, et al. *The Polymeric Materials Encyclopedia*, Sala-
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G03F 7/021; G03F 7/023**(52) U.S. Cl. **430/287.1; 430/286.1;
430/176; 430/197; 430/192; 526/262; 526/281;
526/279; 526/284**Moyer, et al., Negative Tone Photodefinable Benzocy-
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Primary Examiner—Cynthia Hamilton(57) **ABSTRACT**

The invention is a curable cyclobutarene based polymer comprising acid functional pendant groups. The cured polymer displays excellent qualities of toughness, adhesion, dielectric constant, and low stress. The preferred system is soluble in an aqueous base and can be used to generate patterned films with excellent resolution without the need to handle organic developer solvents.

22 Claims, No Drawings